

Claims:

Please amend the claims as follows:

1-2. (Canceled)

3. (Previously Presented) The composition of claim 45, wherein the polymer binder comprises a backbone, and said light attenuating compound is bonded to said backbone.

4. (Previously Presented) The composition of claim 45, wherein said light attenuating compound is bonded to a linkage unit and said linkage unit is bonded to the polymer binder.

5. (Original) The composition of claim 4, wherein said linkage unit comprises a moiety selected from the group consisting of cyclic alkyls, acyclic alkyls, acyclic heteroalkyls, and cyclic heteroalkyls.

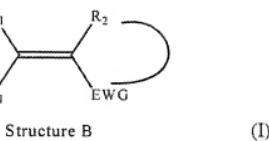
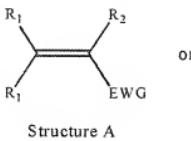
6-15. (Canceled)

16. (Previously Presented) The composition of claim 47, wherein said linkage unit comprises a moiety selected from the group consisting of cyclic alkyls, acyclic alkyls, acyclic heteroalkyls, and cyclic heteroalkyls.

17-35. (Canceled)

36. (Original) In a composition for use during microlithographic processes, said composition comprising a polymer binder dissolved in a solvent system, the improvement which comprises a non-aromatic, light attenuating compound comprising a moiety selected from the group consisting of:

(a)



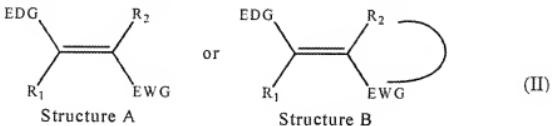
where:

- each R₁ is non-aromatic and is individually hydrogen, or an acyclic or cyclic alkyl or heteroalkyl;
- in structure A, where EWG and R₂ do not form a cyclic unit:

EWG is a non-aromatic electron-withdrawing group; and

R_2 is non-aromatic and is hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and

- in structure B, where EWG and R₂ form a cyclic electron-withdrawing unit, the cyclic unit comprises a C=O, C=S, or a C=N at a first carbon atom, and: a C=O or a C=N attached to a carbon atom at least two carbon atoms away from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;



where:

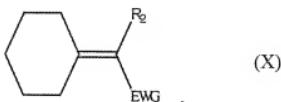
- R₁ is non-aromatic and is individually hydrogen, or an acyclic or cyclic alkyl or heteroalkyl;
 - EDG is an electron-donating group;
 - in structure A, where EWG and R₂ do not form a cyclic unit;

EWG is a non-aromatic electron-withdrawing group; and

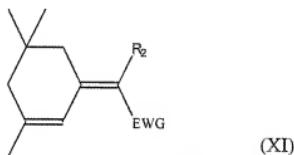
R_2 is non-aromatic and is hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and

- in structure B, where EWG and R₂ form a cyclic electron-withdrawing unit, the cyclic unit comprises a C=O, C=S, or a C=N at a first carbon atom, and: a C=O or a C=N attached to a carbon atom at least two carbon atoms away

from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;



where: R_2 is non-aromatic and is individually hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and EWG is a non-aromatic electron-withdrawing group; and



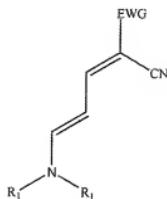
where: R_2 is non-aromatic and is individually hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and EWG is a non-aromatic electron-withdrawing group;

- (b) olefinic moieties of (I), (II), and mixtures thereof; and
- (c) mixtures of (a) and (b),

wherein said polymer binder comprises a backbone, and at least one of R_1 and R_2 of said light attenuating compound is bonded to the polymer binder backbone.

37-40. (Canceled)

41. (Previously Presented) In a composition for use during microlithographic processes, said composition comprising a polymer binder dissolved in a solvent system, the improvement which comprises a non-aromatic, light attenuating compound comprising a moiety of



where EWG is a non-aromatic electron-withdrawing group selected from the group consisting of cyanois, iminos, carboxylic acids, carboxylic esters, carboximido, and sulfonyls groups; and

each R1 is individually selected from the group consisting of hydrogen and alkyls, wherein said polymer binder comprises a backbone, and EWG is bonded to said backbone.

42-44. (Canceled)

45. (Previously Presented) In a curable composition for use during microlithographic processes, said composition comprising a polymer binder dissolved in a solvent system, the improvement which comprises a non-aromatic, light attenuating compound which is bonded to the polymer binder and absorbs light at wavelengths of less than about 300 nm in said composition, said light attenuating compound comprising:

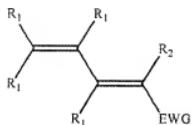
carbon atoms C₁ and C₂ double-bonded to one another and carbon atoms C₃ and C₄ double-bonded to one another and wherein C₃ is bonded to C₂ so as to form conjugated double bonds;

an EWG bonded to carbon atom C₁; and

an EDG bonded to carbon atom C₄, said EDG including a moiety selected from the group consisting of H₃CO, OH, and R₁-O-, wherein R₁ is non-aromatic and is selected from the group consisting of hydrogen, acyclic and cyclic alkyls, and heteroalkyls.

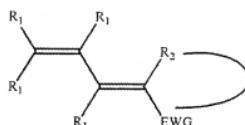
46. (Previously Presented) In a composition for use during microlithographic processes, said composition comprising a polymer binder dissolved in a solvent system, the improvement which comprises a non-aromatic, light attenuating compound comprising a moiety selected from the group consisting of:

(a)



Structure A

or



Structure B

(III)

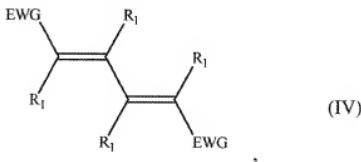
where:

- each R_1 is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls;
- in structure A, where EWG and R_2 do not form a cyclic unit:

EWG is a non-aromatic electron-withdrawing group; and

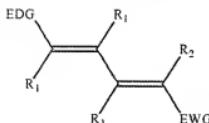
R_2 is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls;

- in structure B, where EWG and R_2 form a cyclic electron-withdrawing unit, the cyclic unit comprises a C=O, C=S, or a C=N at a first carbon atom, and: a C=O or a C=N attached to a carbon atom at least two carbon atoms away from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;

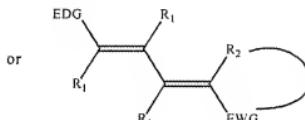


where:

- each R_1 is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls; and
- EWG is a non-aromatic electron-withdrawing group;



Structure A



Structure B

(V)

where:

- each R_1 is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls;
- EDG is an electron-donating group;
- in structure A, where EWG and R_2 do not form a cyclic unit:

EWG is a non-aromatic electron-withdrawing group other than cyano groups, and R_2 is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls;

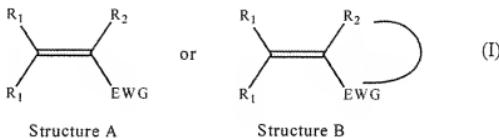
or

EWG is a cyano group, and R₂ is non-aromatic and is individually selected from the group consisting of cyclic alkyls and acyclic alkyls; and

- in structure B, where EWG and R₂ form a cyclic electron-withdrawing unit, the cyclic unit comprises a C=O, C=S, or a C=N at a first carbon atom, and: a C=O or a C=N attached to a carbon atom at least two carbon atoms away from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;
 - (b) diolefinic moieties of (III), (IV), (V), and mixtures thereof; and
 - (c) mixtures of (a) and (b),
- wherein at least one of R₁ and R₂ of said light attenuating compound is bonded to the polymer binder.

47. (Previously Presented) In a composition for use during microlithographic processes, said composition comprising a polymer binder dissolved in a solvent system, the improvement which comprises a non-aromatic, light attenuating compound comprising a moiety selected from the group consisting of:

(a)



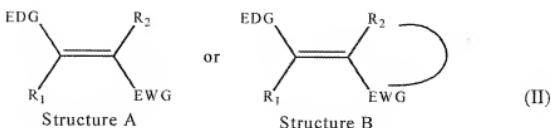
where:

- each R_1 is non-aromatic and is individually hydrogen, or an acyclic or cyclic alkyl or heteroalkyl;
- in structure A, where EWG and R_2 do not form a cyclic unit:

EWG is a non-aromatic electron-withdrawing group; and

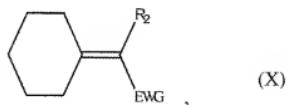
R_2 is non-aromatic and is hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and

- in structure B, where EWG and R_2 form a cyclic electron-withdrawing unit, the cyclic unit comprises a $C=O$, $C=S$, or a $C=N$ at a first carbon atom, and: a $C=O$ or a $C=N$ attached to a carbon atom at least two carbon atoms away from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;

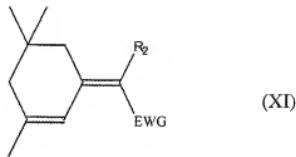


where:

- R_1 is non-aromatic and is individually hydrogen, or an acyclic or cyclic alkyl or heteroalkyl;
- EDG is an electron-donating group;
- in structure A, where EWG and R_2 do not form a cyclic unit:
EWG is a non-aromatic electron-withdrawing group; and
 R_2 is non-aromatic and is hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and
- in structure B, where EWG and R_2 form a cyclic electron-withdrawing unit, the cyclic unit comprises a C=O, C=S, or a C=N at a first carbon atom, and:
a C=O or a C=N attached to a carbon atom at least two carbon atoms away from the first carbon atom; or an O, S, or N as a member of the ring at least two positions away from the first carbon atom;



where: R₂ is non-aromatic and is individually hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and EWG is a non-aromatic electron-withdrawing group; and



where: R₂ is non-aromatic and is individually hydrogen, an acyclic or cyclic alkyl or heteroalkyl, or an electron-withdrawing group; and EWG is a non-aromatic electron-withdrawing group;

- (b) olefinic moieties of (I), (II), and mixtures thereof; and
- (c) mixtures of (a) and (b),

wherein at least one of R₁ and R₂ of said light attenuating compound is bonded to a linkage unit and said linkage unit is bonded to the polymer binder.